

A. CLASSIFICATION OF SUBJECT MATTER**IPC7 C12N 15/85**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 C12N 15/85

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean patents and applications for inventions since 1975Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
NCBI pubmed database, NCBI blastn database, Delphion Research Intellectual Property network database**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Urbanelli L. et al 'Targeted gene transduction of mammalian cells expressing the HER2/neu receptor by filamentous phage' In Journal of Molecular Biology, 2001, vol.313, No.5, p965-76 (NCBI accession No:NM_004448) see the whole document	1,2,3-12,13-15,16
A	Coussens L. et al 'Tyrosine kinase receptor with extensive homology to EGF receptor shares chromosomal location with neu oncogene' In Science. 1985, vol.230, No.4730, p1132-9 (NCBI accession No:M11730) see the whole document	1,2,3-12,13-15,16
A	Yamamoto T. et al 'Similarity of protein encoded by the human c-erb-B-2 gene to epidermal growth factor receptor' In Nature. 1986, vol.319, No.6050, p230-4. (NCBI accession No:X03363) see the whole document	1,2,3-12,13-15,16

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

28 NOVEMBER 2003 (28.11.2003)

Date of mailing of the international search report

28 NOVEMBER 2003 (28.11.2003)

Name and mailing address of the ISA/KR

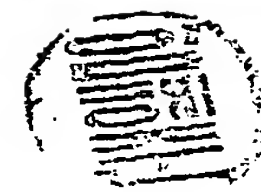
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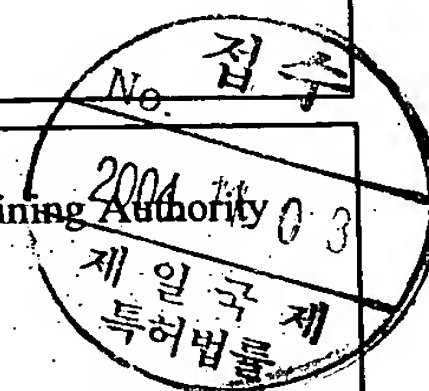
PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PCA30540/PAN	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/KR2003/001400	International filing date (day/month/year) 15 JULY 2003 (15.07.2003)	Priority date (day/month/year) 16 JULY 2002 (16.07.2002)
International Patent Classification (IPC) or national classification and IPC IPC7 C12N 15/85		
Applicant PanGenomics Co., Ltd. et al		





1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 10 FEBRUARY 2004 (10.02.2004)	Date of completion of this report 22 OCTOBER 2004 (22.10.2004)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer HAN, Hyung Mee Telephone No. 82-42-481-5601 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2003/001400

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed

☐ the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the claims:

pages _____, as originally filed
pages _____, as amended (together with any statement) under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the drawings:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☒ contained in the international application in written form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheet _____

5.

☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION

International application No.

PCT/KR2003/001400

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-16	YES
	Claims	None	NO
Inventive step (IS)	Claims	1-16	YES
	Claims	None	NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims	None	NO

2. Citations and explanations (Rule 70.7)

1. Novelty and Inventive Step

The present invention relates to human Her2/neu expressing plasmid constructs prepared by inserting a truncated human Her2/neu gene lacking the intracellular domain into plasmid pTV2 or pCK. The present invention also relates to Her-2/neu DNA vaccines for preventing and/or treating cancer.

The following documents have been considered for the purpose of this report:

- D1: Cancer Res. 60: 5228-5236 (2000)
- D2: Int. J. Cancer 81: 748-754 (1999)
- D3: Cancer Res. 58: 1965-1971 (1998)
- D4: J. Immunol. 167: 3201-3206 (2001)

D1 describes that Her-2/neu oncogene plays a direct role in the pathogenesis and clinical aggressiveness of Her-2/neu-expressing tumors. D2 demonstrates that Her-2/neu plasmid lacking the intracellular or extracellular domain eliminates possible oncogenicity of Her-2/neu. D3 and D4 describe that DNA vaccines encoding rat or human Her-2/neu induce preventive effect against Her-2/neu expressing tumor cells. D1-D4 describe the general state of the art. The prior art documents do not teach or suggest plasmid constructs encoding a truncated human Her-2/neu and Her-2/neu DNA vaccines containing the said plasmids for preventing and/or treating cancers. Therefore, the subject-matter of claims 1-16 is considered to be novel and to involve an inventive step under PCT Article 33(2) and 33(3).

2. Industrial Applicability

The subject-matter of claims 1-16 is considered to be industrially applicable under PCT Article 33(4).